

MEMORANDUM

TO: Paul E. Foster, P.E.

THROUGH: Tammy M. Henry, P.E.

FROM: Shaikh A. Tayeb, P.E.

SUBJECT: Title V Significant Permit Modification: Delaware Solid Waste Authority-Cherry Island Landfill.
Draft/Proposed Permit: AQM-003/00111-Renewal 1(Revision 2)

DATE: September 2, 2009

Background

Cherry Island Landfill (CIL) is located at the Northern Solid Waste Management Center (NSWMC) in Wilmington, New Castle County, Delaware. CIL (the facility) is owned and operated by the Delaware Solid Waste Authority (DSWA). The facility is operated under a Title V permit. The existing Title V permit AQM-003/00111-Renewal 1(Revision 1) expires in January 2012. On 1/26/09, the Department ("Air Quality Management" or "AQM") received an application from DSWA requesting significant permit modification of their existing Title V permit.

- The Company is not subject to the requirements of Section 112(r) of the 1990 Clean Air Act.
- The Company has not registered with the State of Delaware "Regulations for the Management of Extremely Hazardous Substances."
- Title VI is not applicable to the facility.
- DSWA has not requested any information to be held confidential.

Reason for significant permit modification

As required by Condition 1.2 of permit APC-2004/0746-Operation (NSPS)(MACT) dated 2/4/08 (7 **DE Admin Code** 1102 operating permit for two Low-NO_x enclosed flares with a H₂S pretreatment system), DSWA submitted the above referenced application. The attached Title V draft/proposed permit incorporates the conditions of the above referenced enclosed flare permit into Title V permit. The attached draft/proposed permit also incorporates some other changes as outlined by Tables 2 and 3 of this memorandum.

Correspondence Chronology

Table 1 summarizes correspondences with DSWA.

Table 1: List of correspondences.

Date	Subject
3/19/09	DSWA requested to change the annual and semi-annual reporting time.
4/28/09	DSWA responded on AQM comments dated 4/8/09. AQM had 4 comments: 1) The determination of sweet gas concentration and method that will be used for this determination; 2) Questions related to net heating value and exit gas velocity of flare; 3) Updated information on PTEs and 4) Comments on summary table of deviations.
5/27/09	Email correspondence regarding example calculations of PTEs.
8/5/09	DSWA requested to change the Method 22 visible emissions observation frequency.
8/21/09	Additional information received on neat heating value (example calculation).

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New items in *draft/proposed* permit

The main purposes of this significant permit modification are

1. To incorporate the conditions of permit APC-2004/0746-Operation (NSPS)(MACT) dated 2/4/08 for two Low-NO_x enclosed flares with a H₂S pretreatment system into Title V permit.
2. To remove Chesmont Flare (1200 scfm Chesmont Engineering Candle Flare) permit conditions from Title V permit. Note that this flare has been decommissioned. It is no longer at the site.

In addition to the above referenced changes, the attached draft/proposed permit has several other changes as shown below. The following table summarizes all requested changes outlined by DSWA. AQM comments are also added to this table.

Table 2: DSWA request and AQM comments.

Item No.	DSWA comments/Change requested by DSWA	AQM Comments	Reference (Draft/Proposed AQM-003/00111-Renewal 1(Rev. 2))
1	Please consider renaming the permit so that instead of "Renewal-1" it is designated as "R-1". This would be consistent with the naming convention used for the Title V permits at Central and Southern landfills.	'Renewal-1' will remain as part of permit number. DSWA may use designation 'R' instead of 'Renewal' for reporting purpose.	All pages.
2	Removal of Chesmont Flare permit conditions. This flare was dismantled in November 2007.	The Chesmont Flare permit conditions have been removed from the attached draft/proposed permit.	-
3	Passive flares: Passive flares are used for odor control. DSWA requests that the notification requirement be changed to within 24 hours after installation to provide flexibility to respond to odors and operational needs.	This condition has been revised as per DSWA request. The Company is required to notify the Department within 24 hours after relocation of passive flares within or to any DSWA landfill sites.	Page 16 (Reporting requirement)
4	Addition of Zink Flares to permit.	The conditions of Zink flares with a H ₂ S pretreatment system have been incorporated into the attached draft/proposed Title V permit. Note that the two Low-NO _x enclosed flares are also designated as Zule-A ("Zink-A") and Zule-B ("Zink-B").	Page 17 [Condition 3-Table 1(b)]
5	Section 3.2.8 of APC-2004/0746 requires 90% removal efficiency by the H ₂ S pretreatment system. This should be amended to reflect either a sweet gas concentration of less than 200 ppm or a 90% removal whichever is higher. 200 ppm is 90% of the design inlet level of the system, 2000 ppm.	This request has been incorporated into the attached draft/proposed Title V permit.	Page 20 [Condition 3-Table 1(b)(1)(iv)(B)]
6	Section 4.7 of APC-2004/0746-Operation	This condition will remain in the permit.	Page 19

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	(NSPS)(MACT) requires monthly lab testing for net heating value. DSWA requests that this requirement be removed. DSWA also requests that this change should be reflected in the revised Title V permit. Calculations are available to demonstrate compliance with these provisions.	However, the condition has been modified.	(See comment on Item 7)
7	Section 4.7 of APC-2004/0746-Operation (NSPS)(MACT) requires monthly lab testing for net heating value. DSWA requests that this requirement be removed. DSWA also requests that this change should be reflected in the revised Title V permit. At present, net heating value is referenced in Condition 3-Table 1(e)(2)(i)(G) however no frequency is specified. Calculations are available to demonstrate compliance with these provisions.	<p>As in other DSWA landfill permits, this condition will remain in the attached permit. However, the condition has been modified as shown below:</p> <p><i>DSWA may use GEM testing and lab sample analysis results to perform calculations referred by Condition 3-Table 1(b)(iii)(C) quarterly basis. The Company shall perform calculations once per calendar year as identified by federal regulation 40 CFR 60, Subpart A, §60.18(f)(3).</i></p> <p>Note that general control device (flare) requirements are outlined by federal regulation §60.18(c). It suggests that the flares shall follow the procedures outlined by Section 3 of this regulation in order to identify the net heating value H_t</p> $H_t = K \sum_{i=1}^n C_i H_i$ <p>Where, C_i=Concentration of sample component i in ppm on wet basis, as measured for organics by Reference Method 18; H_i=Net heat of combustion of sample component at 25°C and 760 mm Hg.</p>	Page 19 (Conditions 3-Table 1(b)(1)(iii)(C) & (vii)(C))

Other Changes

In addition to changes described above, the attached draft/proposed permit also contains the following changes:

Table 3: Other Changes.

No.	Subject	AQM Comments	Reference (Draft/Proposed AQM-003/00111- Renewal 1(Rev. 2))
1	Two 3000 scfm each open flares designated as "North" and "East" Flares.	<p>All conditions of open flares are deleted from the attached permit.</p> <p>As per DSWA's request letter 7/27/09, the open flares received an approval for decommissioning from AQM on 8/5/09. Note that the enclosed</p>	-

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No.	Subject	AQM Comments	Reference (Draft/Proposed AQM-003/00111- Renewal 1(Rev. 2))
		flares have higher capacities compared to open flares (9000 scfm total vs. 6000 scfm total).	
2	Reporting dates: Annual compliance certification and semi-annual report.	As per email received from DSWA on 3/19/09, AQM resumed the Company's reporting requirements as identified by other Title V facilities in Delaware.	Page 12 [Condition 3(c)(2)(i)]
3	Passive flare information.	Passive flares are used temporary basis for odor control. However, these flares are regularly used at the site and the current permit does not have any passive flare emission limitations. A new condition is added to the attached permit that requires DSWA to include passive flare emissions (based on actual hours of operation) to yearly emissions inventory report.	Page 16 [Condition 3-Table 1(a)(1)(ix)(B)]
4	Method 22 Frequency.	As per DSWA letter dated 8/5/09, AQM agrees to change the Method 22 visible emissions monitoring requirement from monthly to quarterly. Note that the enclosed flares permit has a provision in Condition 4.2 for this change. It states that DSWA may request that Method 22 observation be reduced from monthly to quarterly based on one-year data review.	Page 18 [Condition 3-Table 1(b)(1)(vi)(G)]
5	Hours of operation of H ₂ S pretreatment system.	H ₂ S pretreatment system is often not in operation while burning landfill gas through the enclosed flares. Although the current H ₂ S concentration (~500 ppm) in landfill gas is much lower compared to previous years, this is our concern that the pretreatment system is often not operational. A new condition is added to the attached permit that requires DSWA to submit a quarterly report to AQM identifying the operational hours of the unit and the reasons why the system is not operational.	Page 18 [Condition 3-Table 1(b)(1)(x)(C)]
6	NMOC destruction efficiency.	As per §60.752(b), the requirement of reduction of <i>outlet NMOC concentration to less than 20 ppm by volume, dry basis as hexane at 3 percent oxygen</i> is added to the original permit condition. This requirement is for enclosed flares.	Page 20 [Condition 3-Table 1(b)(1)(iii)(G)]
7	Radius of influence (ROI) of LFG extraction well	AQM often receives letter from DSWA requesting approval (initial or final) for gas well decommissioning for various reasons. ROI can play a significant role while assessing this approval. A new condition is added to section 'Well Decommissioning' that requires the Company to submit the estimated radius of influence (ROI) of the well to be decommissioned and the ROIs of nearby active wells.	Page 30 [Condition 3-Table 1(c)(2)(x)(A)]

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No.	Subject	AQM Comments	Reference (Draft/Proposed AQM-003/00111- Renewal 1(Rev. 2))
8	Closure and equipment removal.	Conditions of 'closure and equipment removal' are new addition. The existing permit did not have these requirements.	Pages 31 & 32 [Condition 3-Table 1(c)(3)]
9	55 KW diesel fired emergency generator (EG).	Conditions of emergency generator are updated based on 7 DE Admin Code 1144. A new condition is added to the attached permit that requires DSWA to include emissions information of EG to yearly emissions inventory report as part of facility wide emissions.	Page 36 [Condition 3-Table 1(e)(1)(x)(B)]

Emissions

The facility's emission limitations are based on unit-specific emissions, mainly from two enclosed flares associated with a H₂S pretreatment system. The emission limitations of these units are already in 7 **DE Admin Code** 1102 operating permit. No other emissions are expected because of the modification of Title V permit.

Table 4: TPY emissions (Based on rolling 12-month period).

Emissions	NO _x	CO	PM	NMOC	SO _x	HCl
TPY	11.95 (each) 23.9(both flares combined)	57.4 (both flares combined)	16.1 (both flares combined)	1.0 (both flares combined)	77 (both flares combined)	1.97(both flares combined)

CIL is a major source because the facility meets the following three conditions of 40 CFR Part 60, Subpart Cc, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*: (1) the landfill has been accepting waste since November 8, 1987; (2) the landfill has a design capacity greater than 2.5 million megagrams and (3) the landfill has a calculated nonmethane organic compound (NMOC) emission which exceeds 50 megagrams per year. The Company is a refuse system facility, primary SIC code 4953. The primary applicable requirements are based on 7 **DE Admin Codes** 1102, 1104, 1106, 1108, 1114, 1119, 1120, 1130; and EPA Landfill Air Pollution Regulations 40 CFR Part 60, Subparts Cc and WWW, and Part 63, Subpart AAAA. Note that the approved Delaware 111(d) plan for Municipal Solid Waste Landfills-40 CFR Part 62, Subpart I is also an applicable requirement. Subpart WWW has been adopted by the state by reference (7 **DE Admin Code** 1120, Section 28). The attached draft/proposed permit includes federally enforceable conditions for emission limitations for the flares that are already permitted through appropriate permitting procedures. It can be noted that CIL is owned and operated by DSWA. Therefore, multi-party compliance responsibilities are not an issue for this facility at this time.

MACT requirements

As in the existing Title V permit, the following MACT requirements remain the same (Page 32):

- Compliance reporting every 6 months.
- Startup, Shutdown and Malfunction plan (SSM plan) and the reporting requirements of this plan.

Conclusion and Recommendations

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It is recommended that the attached draft/proposed significant permit modification be advertised. In accordance with the provisions of EPA's operating permit program promulgated in 40 CFR Part 70, the states of Maryland, New Jersey and Pennsylvania will be notified of intent to approve this permit modification for DSWA's Northern Solid Waste Management Center (Cherry Island Landfill). In addition, a copy of the draft/proposed permit is recommended to send to DSWA and to EPA Region III Office for comments.

PEF:TMH:SAT:sb

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pc: Dover Title V File

TITLE V PERMIT REVIEW
PERMIT APPLICATION CHECKLIST
(Title V Significant Permit Modification)

STATE: DE

SOURCE NAME: Delaware Solid Waste Authority-Cherry Island landfill

AFS PLANT ID: 1000300111

SOURCE TYPE: Municipal Solid Waste Disposal

PERMIT #: AOM-003/00111-Renewal 1(Rev. 2)

SIC #: 4953

SOURCE LOCATION (COUNTY): New Castle, DE

I. Is this a general permit? If yes, which one? (Go to Part III).....NO
If no, go to Part II.

II. PROGRAM IMPLEMENTATION

Does this permit contain "streamlined limits" (per White Paper #2).....NO

Does this permit contain requirements/provisions for:

1. Periodic Monitoring.....YES
2. NESHAP/MACT (if so, list subparts).Subpart AAAAYES
3. Case-by-Case MACT.....NO
4. NSPS (if so, list subparts).Subpart Cc.....YES
5. PSD/NSR.....NO
6. Acid Rain Phase II Permit.....NO
7. Potential-to-Emit Limits.....YES
8. Consent Order Agreement.....NO
9. NO_x RACT.....NO
10. VOC RACT.....NO
11. Does permit application contain confidential information?.....NO

III. COMPLIANCE STATUS

Is the Source subject to a compliance schedule?.....NO

IV. EPA REVIEW

1. Do you want EPA to review all or part of this permit?.....YES
2. Are there other issues you would like to call to EPA's attention?.....NO

STATE CONTACT: Shaikh A. Tayeb
PHONE: 302-323-4542

DATE: September 6, 2009

(for EPA use only) dated entered

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